

AMENDMENTS TO THE CLAIMS

- 1-5. (Canceled).
6. (Currently Amended) A method for enhancing audio signals, comprising:
receiving an audio signal;
separating the audio signal into component signals corresponding to discrete bands,
wherein the component signals comprise a full bandwidth component signal, a bass component
signal, a midrange component signal, and a treble component signal;
processing ~~one or more of~~ the component signals with distinct processing pathways,
resulting in processed component signals, wherein the distinct processing pathways include a full
bandwidth pathway for processing the full bandwidth component signal, a bass pathway for
processing the bass component signal, a midrange pathway for processing the midrange component
signal, and a treble pathway for processing the treble component signal;
aggregating the processed component signals to recreate a standard signal in one or
more channels; and
performing additional post-processing on the standard signal to mask artifacts and
response anomalies introduced by a codec and equipment used, resulting in an enhanced audio
signal.
7. (Original) A method according to claim 6, wherein the audio signal is a compressed
audio signal.
- 8-9. (Canceled).
10. (Original) A method according to claim 6, wherein the post-processing comprises at
least one of:
3D/live enhancement for adding life and stereo perspective to the sound field of the
enhanced audio signal;

recording environment simulation for adding diffusion, reverb, depth, regeneration, and room decay to the enhanced audio signal;

voice elimination for reducing vocals in the enhanced audio signal; wide stereo enhancement for adding wider stereo perspective to the sound field of the enhanced audio signal; parametric equalization for providing broad spectrum shaping of the enhanced audio signal;

filtering the enhanced audio signal to reinforce subwoofer and bass frequencies; wall simulation for producing time delays that simulate reflections from a stage; room simulation for producing time delays that simulate natural room acoustics; karaoke enhancement for removing equal energy components from left and right signal channels;

vocal enhancement for clarifying vocal features;

subsonic enhancement for low-bass reinforcement of the enhanced audio signal; and look-ahead automatic gain control for controlling output dynamic range.

11. (Original) A method according to claim 6, wherein the post-processing includes room simulation for compensating for poor room acoustics in a listening environment for the enhanced audio signal.

12-14. (Canceled).

15. (Currently Amended) A system for enhancing audio signals, comprising:

a processor for:

receiving an audio signal; and

separating an audio signal into component signals corresponding to discrete bands, wherein the component signals comprise a full bandwidth component of the audio signal, a bass component of the audio signal, a midrange component of the audio signal, and a treble component of the audio signal;

a full bandwidth pathway for processing [[a]] the full bandwidth component of [[an]] the audio signal, the full bandwidth pathway producing a processed full bandwidth signal;

~~at least one limited bandwidth pathway for processing a limited bandwidth component of the audio signal, the limited bandwidth pathway producing a processed limited bandwidth signal;~~

a bass pathway for processing the bass component of the audio signal and producing a processed bass component signal;

a midrange pathway for processing the midrange component of the audio signal and producing a processed midrange component signal;

a treble pathway for processing the treble component of the audio signal and producing a processed treble component signal;

a mixer configured to combine the processed full bandwidth signal, ~~and the processed limited bandwidth signal~~ the processed bass component audio signal, the processed midrange component audio signal, and the processed treble component audio signal to create a mixed audio signal; and

one or more post-processing elements for further enhancement of the mixed audio signal.

16. (Canceled).

17. (Original) A system according to claim 15, wherein the one or more post-processing elements comprises at least one of:

a 3D/live enhancement element configured to add life and stereo perspective to the sound field of the mixed audio signal;

a recording environment simulator configured to add diffusion, reverb, depth, regeneration, and room decay to the mixed audio signal;

a voice elimination element configured to reduce vocals in the mixed audio signal;

a wide stereo enhancement element configured to add wider stereo perspective to the sound field of the mixed audio signal;

a parametric equalizer configured to provide broad spectrum shaping of the mixed audio signal;

at least one filter configured to reinforce subwoofer and bass frequencies in the

mixed audio signal;

a wall simulator configured to produce time delays that simulate reflections from a stage;

a room simulator configured to produce time delays that simulate natural room acoustics;

a karaoke enhancement element configured to remove equal energy components from left and right signal channels;

a vocal enhancement element configured to clarify vocal features;

a subsonic enhancement element configured to reinforce low-bass components of the enhanced audio signal; and

a look-ahead automatic gain control element configured to control output dynamic range.

18. (Currently Amended) An apparatus for playback of digital audio files, said apparatus comprising:

a digital audio signal source;

at least one processor coupled to the digital audio signal source, said at least one processor being configured to carry out a method comprising:

receiving an audio signal from the digital audio signal source;

separating the audio signal into component signals corresponding to discrete bands, wherein the component signals comprise a full bandwidth component signal, a bass component signal, a midrange component signal, and a treble component signal;

processing ~~one or more of~~ the component signals with distinct processing pathways, resulting in processed component signals, wherein the distinct processing pathways include a full bandwidth pathway for processing the full bandwidth component signal, a bass pathway for processing the bass component signal, a midrange pathway for processing the midrange component signal, and a treble pathway for processing the treble component signal;

aggregating the processed component signals to recreate a standard signal in one or more channels; and

performing additional post-processing on the standard signal to mask artifacts and response anomalies introduced by a codec and equipment used, resulting in an enhanced audio signal; and

one or more speaker drivers coupled to the processor, the one or more speaker drivers being configured to drive one or more speakers for playback of the enhanced audio signal.

19-26. (Canceled).

27. (Currently Amended) A system for enhancing audio signals, comprising:

a full bandwidth pathway for processing a full bandwidth component of an audio signal, the full bandwidth pathway producing a processed full bandwidth signal, the full bandwidth pathway comprising:

a first input amplifier having an input for the audio signal, a first output amplifier having an output for the processed full bandwidth signal, and a first compressor connected between the first input amplifier and the first output amplifier;

a bass pathway for processing a bass component of the audio signal and producing a processed bass component of the audio signal, the bass pathway comprising:

a second input amplifier having an input for the audio signal, a second input amplifier having an output connected to an input of low-pass filter, the low-pass filter having an output connected to an input of a second compressor, an output of the second compressor connected to an input of a second output amplifier;

a midrange pathway for processing a midrange component of the audio signal and producing a processed midrange component of the audio signal, the midrange pathway comprising:

a third input amplifier having an input for the audio signal, a third input amplifier having an output connected to an input of band-pass filter, the band-pass filter having an output connected to an input of a third compressor, an output of the third compressor connected to an input of a third output amplifier;

a treble pathway for processing a treble component of the audio signal and producing a processed treble component of the audio signal, the treble pathway comprising:

a fourth input amplifier having an input for the audio signal, a fourth input

amplifier having an output connected to an input of high-pass filter, the high-pass filter having an output connected to an input of a fourth compressor, an output of the fourth compressor connected to an input of a fourth output amplifier;

~~at least one limited bandwidth pathway for processing a limited bandwidth component of the audio signal, the limited bandwidth pathway producing a processed limited bandwidth signal, the at least one limited bandwidth pathway comprising:~~

~~a second input amplifier having an input for the audio signal, a second output amplifier having an output for the processed limited bandwidth signal, a second compressor connected between the second input amplifier and the second output amplifier, and a filter connected between the second input amplifier and the second output amplifier; and~~

~~a mixer configured to combine the processed full bandwidth signal, and the processed limited bandwidth signal~~ the processed bass component of the audio signal, the processed midrange component of the audio signal, and the processed treble component of the audio signal, to create a mixed audio signal; and

one or more post-processing elements for further enhancement of the mixed audio signal.

28-31. (Canceled).

32. (Original) A system according to claim 27, further comprising a pre-compressor configured to receive an input audio signal and to generate the audio signal as a compressed representation of the input audio signal.

33-34. (Canceled).